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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
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10/562,826

12/30/2005

Kousuke Akiyama

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SUITE 800

WASHINGTON, DC 20006-1021

EXAMINER

AHMED, SHEEBA

ART UNIT

PAPER NUMBER

1794

MAIL DATE

DELIVERY MODE

05/13/2008

PAPER

Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Office Action Summary	Application No. 10/562,826	Applicant(s) AKIYAMA ET AL.	
	Examiner SHEEBA AHMED	Art Unit 1794	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 24 April 2008.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 11-21 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 11-21 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
 2. ☐ Certified copies of the priority documents have been received in Application No. _____.
 3. ☒ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|--|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413) |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | Paper No(s)/Mail Date. _____ |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO/SB/08) | 5) <input type="checkbox"/> Notice of Informal Patent Application |
| Paper No(s)/Mail Date _____ | 6) <input type="checkbox"/> Other: _____ |

DETAILED ACTION

Continued Examination Under 37 CFR 1.114

1. A request for continued examination under 37 CFR 1.114, including the fee set forth in 37 CFR 1.17(e), was filed in this application after final rejection. Since this application is eligible for continued examination under 37 CFR 1.114, and the fee set forth in 37 CFR 1.17(e) has been timely paid, the finality of the previous Office action has been withdrawn pursuant to 37 CFR 1.114. Applicant's submission filed on April 24, 2008 has been entered.

Response to Amendment

2. Amendments to claims 11, 12, 19, and 20 have been entered in the above-identified application. Claims 1-10 are canceled. New claim 21 has been added. **Claims 11-21 are now pending.**

Claim Rejections - 35 USC § 103

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

3. Claims 11-21 are rejected under 35 U.S.C. 103(a) as being unpatentable over Billmers et al. (US 2002/0015854) in view of Hendricks (US 5,538,668).

Billmers et al. disclose a paper coating composition providing good barrier properties comprising a blend of hydrophobically modified high amylose starch and polyvinyl alcohol. The starch is modified with a hydrocarbon group of 6 to 18 carbon atoms. The starch is hydrophobically modified with hydrocarbon groups of at least 6 carbon atoms, more particularly 6 to 18 and preferably 8 to 12 carbon atoms. This hydrophobically modified starch can be prepared by reacting starch and an organic anhydride reagent. All types of fillers, pigments, dyes and rheology modifiers may be added in the usual manner to the paper product which is to be coated or sized. Such materials include clay, talc, titanium dioxide, calcium carbonate, calcium sulfate and diatomaceous earths. Usually an effective additive amount of up to about 25% by weight can be used. The starches can be employed in amounts to provide a coating or size concentration ranging from about 0.25 to 15.0% by weight, dry basis, and preferably from about 0.5 to 5% by weight based on the weight of the finished dry paper. Within this range, the precise amount which is used will depend for the most part upon the type of pulp which is being utilized, the specific operating conditions, as well as the particular end use for which paper is desired. The use of the present starches as coatings and surface sizing agents results in paper characterized by improved water resistance, reduced porosity and increased oil resistance. Paragraph 16 states that the modified high amylose starch may be further modified or derivatized to contain other groups in addition to the hydrocarbon chain as long as such groups do not interfere with the barrier or film forming properties provided by

the hydrocarbon substituent and the starch itself. Such starches include crosslinked starches.

Billmers et al. do not teach that the coating containing the hydrophobized starch is present in an amount of 0.5 to 20g/m² and that the coating further contains a fatty acid in a solid content of 1 to 50% by weight based on the total weight of the solid of the coating layer.

However, Hendricks discloses a composition and method for controlling foam in the coating solution of a papermaking operation and describes in Column 1 that a coating may be added to certain papers to enhance surface characteristics such as color, reflectivity and printability. Starch solutions are commonly employed. Foam is a consistent problem in these starch solutions and coatings and air bubbles in the coating cause holes in the coating surface resulting in loss of sheet surface properties, sizing and ink bleed through. Hence, conventional defoamer/anti-foam compositions such as a fatty acid may be added.

Accordingly, it would have been obvious to one having ordinary skill in the art to add a fatty acid to the coating layer given that Hendricks specifically states that such anti-foam agents are added to starch solution. Furthermore, it would have been obvious to optimize the coating weight of the hydrophobized starch coating and the amount of the fatty acid given that Billmers et al. specifically teach that the starches as coatings and surface sizing agents results in paper characterized by improved water resistance, reduced porosity and increased oil resistance and Hendricks teaches that fatty acids are added to control the amount of the foam in the starch solution.

Response to Arguments

4. Applicant's arguments with respect to claims 11-21 have been considered but are moot in view of the new ground(s) of rejection.

Conclusion

5. Any inquiry concerning this communication or earlier communications from the examiner should be directed to SHEEBA AHMED whose telephone number is (571)272-1504. The examiner can normally be reached on Monday-Friday from 8am to 4:30pm.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Rena Dye can be reached on (571)272-3186. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only.

/Sheeba Ahmed/
Primary Examiner, Art Unit 1794